ON THE STRUCTURAL POSITIONS OF THEMES AND GOALS[*]

1. INTRODUCTION: THEMATIC HIERARCHIES

A central concern of linguistic theory is to account for how the arguments of a given lexical item are associated with positions in a syntactic structure. Many theorists hold that this mapping is mediated by a so-called thematic hierarchy. In Principles-and-Parameters style theories this typically works as follows. A verb selects arguments with certain thematic (θ-) roles. These θ–roles are ranked by the thematic hierarchy, and phrase structure is constructed according to the rankings. This mapping obeys a constraint like the one given in (1).

(1) If the θ-role of an argument X is higher than the θ-role of a second argument Y, then X c-commands Y at the level of D-structure.[1]
(see Larson (1988), Speas (1990), Baker (1989), Grimshaw (1990)).

Less structurally oriented theories get similar effects without the use of phrase structure by allowing certain principles to refer to the thematic hierarchy directly (Foley and Van Valin (1984), Kiparsky (1987), Bresnan and Kanerva (1989), Bresnan and Moshi (1990), etc.).

In spite of its rather wide acceptance, this body of work is threatened by well-known controversies about what exactly the thematic hierarchy is. All agree that agents rank higher than themes. However, there is no consensus on the ranking of goal and benefactive roles relative to themes and locations.[2] Suppressing certain finer-grained details, the different positions can be grouped into three major classes as summarized in (2).

(2) Thematic Hierarchies

a. Agent > benefactive/goal > theme > location
Kiparsky (1987) --(English idioms)
Bresnan and colleagues --various Bantu facts, indirectly
Machobane (1989) --various Bantu facts

b. Agent > goal/experiencer/location > theme
Jackendoff (1972) --binding of English reflexives
Grimshaw (1990) --Light verbs in Japanese, psych verbs
Li (1990) --Chinese compounds
Foley and Van Valin (1984) --(various)

c. Agent > theme > goal/benefactive/location
Carrier-Duncan (1985) --Tagalog morphosyntax
Larson (1988) --(English idioms)
Baker (1989) --Serial verbs in Kwa, Creoles

The Kiparsky/Bresnan hierarchy in (2a) sharply distinguishes goals from locations, ranking goals higher than themes but locations lower. In contrast, the Jackendoff/Grimshaw hierarchy in (2b) combines goals and locations and ranks them both higher than themes. Finally, the Larson/Baker hierarchy in (2c) is like the Jackendoff/Grimshaw hierarchy in that it combines goals and locations; however it ranks them both lower than themes.

The difficulty in resolving this controversy is largely due to the presence of so-called dative shift alternations within and across languages. Thus, many three-place verbs in English can appear in either the NP-PP construction given in (3) or the double-NP construction in (4).

(3) a. John passed the ring to Mary.
    b. Peter opened a beer for Max.

(4) a. John passed Mary the ring.
    b. Peter opened Max a beer.

In sentences like (3), the theme clearly has prominence over the goal by a variety of syntactic tests, whereas in (4) the goal has prominence over the theme by those same tests (Larson 1988). In order to maintain a consistent thematic hierarchy, one must decide which of these constructions are basic, and which are derived. The picture is further complicated by the fact that some languages seem to have (3)-like constructions but not (4)-like ones (e.g., French); others seem to have (4)-like constructions but not (3)-like ones (e.g., Mohawk, some Bantu languages). Linguists have in practice assumed different thematic hierarchies in part because they have been concerned with different languages and different phenomena.

Significantly, this controversy occurs not only across theoretical frameworks, but also within theoretical frameworks, even when the role of the thematic hierarchy is held relatively constant. Thus within Principles-and-Parameters, Larson (1988) assumed that the NP-PP constructions are base-generated and NP-NP constructions are derived by NP-movement in English. However, this choice was not particularly principled, even given his assumptions. His analysis works just is well in reverse, where the NP-NP structure is base-generated and the NP-PP structure is derived by NP movement, as assumed in Aoun and Li (1989). Given the crosslinguistic differences alluded to above, one might even entertain the idea that languages differ on exactly this point, with theme-dominant constructions being basic in some languages (French) and goal-dominant constructions being basic in others (Sesotho and Mohawk, where "dative shift" seems obligatory). Essentially this position is put forward by Dryer (1987) in a Relational Grammar framework; it is also mentioned by Larson (1988:351 fn. 18).

This article contributes to the general discussion by pointing out a fact of considerable crosslinguistic generality that has largely escaped attention in the literature on dative-shift-like alternations: the fact that for the most part there is no similar dative shift alternation with unaccusative verbs. This fact is rather mysterious under most traditional accounts. It is particularly curious given that the restriction does not generalize to passive constructions. Nevertheless, a principled and adequately general explanation can be given using some recent developments in syntactic theory. In the process, I build an argument that (2c) is the correct thematic hierarchy. Indeed, we will see that this hierarchy is rather

directly motivated even in languages like Sesotho and Mohawk, which otherwise seem to fit in more naturally with one of the other hierarchies.

2. A GAP IN THE PARADIGM OF DATIVE SHIFT

Since Burzio (1986), the standard assumption has been that unaccusative verbs have selectional properties which are the same as those of comparable transitive verbs. Indeed, the NP-PP sentences in (3) have straightforward unaccusative variants, as shown in (5).

(5) a. The ring passed t to Mary.
    b. The beer opened t for Max.

However, there are no unaccusative variants of the sentences in (4). In classical GB theory, such sentences would have the unremarkable-looking D-structure shown in (6).

(6) e [$_{VP}$ passed Mary the ring]

However, neither NP can be moved to derive an acceptable sentence from this source. If the theme NP moved, one would expect sentences like (7); if the goal NP moved, one would derive the sentences in (8).

(7) a. *The ring passed Mary t.
    b. *The beer opened Max t.

(8) a. *Mary passed t the ring.
    b. *Max opened t a beer.
    (OK only if 'Mary' and 'Max' are the agents)

Neither type of sentence is grammatical. As far as I know, there are no English verbs can be simultaneously a double-object verb and an unaccusative verb. The pattern is summarized in (9).[3]

(9) English Vs

		with agent	without agent
subcat frame	__ NP PP	OK	OK
	__ NP NP	OK	*

This gap becomes even more striking when one recalls that dative shift can interact with passive. Thus the sentences in (10) are acceptable, at least in some dialects.[4]

(10) a. Mary was passed t the ring.
     b. Max was opened t a beer.

Under Burzio's assumptions, the underlying structure of unaccusatives like (8) is essentially identical to that of the passives in (10). Thus, it is hard to see why one should be good and the other bad.

The only reference I am aware of that considers roughly this range of data within a Chomskian framework is Everaert (1990). Everaert shows that essentially the same empirical generalization holds in Dutch and English, with sentences like (7) and (8) (which he calls "inchoatives") being ungrammatical in both. His tentative account of sentences like (7) makes crucial use of the Jackendoff/Grimshaw thematic hierarchy in (2b). Thus, he takes "inchoativization" to involve the lexical deletion of the external argument of a verb, followed by the externalization of the highest remaining argument on the thematic hierarchy. Since the goal is hypothesized to be higher than the theme, it becomes the external argument and hence the structural subject. (7) is thus ungrammatical because the goal is the external argument but is expressed in an internal position--a violation of Theta theory. By these assumptions, however, the sentences in (8) are expected to be fully grammatical, contrary to fact. These Everaert rules out by Case theory (1990:127): he claims that goal objects are inherently Case-marked, and as such cannot be moved to the subject position. This assumption is independently motivated by the fact that goal objects cannot move to subject position even in passive sentences in Dutch. Thus, (11a) and (11b) are taken to be parallel:

(11) a. *Hij werd __ het eten bezorgd (door mij). (cf. (10))
He was the food delivered by me.
'He was delivered the food by me.'

b. *Hij onglipte __ de teugels. (cf. (8))
He slipped the reins.
(i.e., the reins slipped out of his hands.)

However, Everaert's analysis does not generalize correctly beyond Dutch. In English there is little reason to say that the goal NP receives inherent Case; on the contrary, it may move into the subject position in passive sentences as shown in (10). Nevertheless, the unaccusatives in (8) are still ruled out. Thus, Everaert's suggestions are not adequate to properly distinguish passives and unaccusatives. Moreover, Everaert's theory holds that sentences like (7) are ruled out for fundamental Theta-theoretic reasons, while sentences like (8) are merely ruled out by Case theory. Assuming that the principles of Theta theory are more universal than those of Case assignment, we would predict that sentences like (8) should be possible in some languages, whereas sentences like (7) should be impossible in all languages. In fact, we will see below that the opposite is true. Thus, while Everaert's theory seems to appeal to the right ingredients for an explanation, the patterns do not come out correctly as they stand, particularly from a broad cross-linguistic perspective.

Nor do other generative frameworks hold the key to this problem. Perhaps the most likely place to find material on this topic would be the Relational Grammar literature, in the light of its extensive work on the possibilities and limits of grammatical relation-changing. In RG terms, the grammatical examples in (10) are derived by 3-to-2 advancement, followed by passive. Similarly, the impossible examples in (8) could be derived by 3-to-2 advancement, followed by unaccusative advancement. Such a derivation would not violate any known relational laws; indeed equivalent derivations have been proposed for certain psychological verbs (Donna Gerdts, personal communication). In order to rule out such a derivation, it seems that we must put a condition on "3-to-2 advancement" (dative shift) such that it only applies

in clauses that have a 1 (an underlying subject). This is a very peculiar-looking condition, and I take it to be more a statement of the problem than a solution to it. Thus, the ungrammaticality of the examples in (8) is as mysterious in classical RG terms as it is in classical GB terms.[5]

3. EVIDENCE FROM OTHER LANGUAGES

Significantly, the deviance of examples like (7) and (8) is not limited to English and Dutch. On the contrary, essentially the same effect can be seen in languages as geographically and typologically diverse as Mohawk, Japanese, and certain Bantu languages. This section briefly presents the relevant facts from Sesotho (Bantu), and Japanese; Mohawk facts will be introduced when they become relevant in section 4.

Sesotho[6] has no prepositions comparable to *to* or *for* in English. Hence there is no direct correlate of (3) in the language. Sesotho does however have applicative constructions that are very much like (4) in English; an example is given in (12).

(12) Banana ba-pheh-el-a 'me nama.
girls SP-cook-appl-fv mother meat
'The girls are cooking my mother meat.'

Indeed, the applicative construction in Sesotho is much more productive than in English, perhaps because it is overtly marked by a morpheme on the verb. Benefactive applicatives can be formed from almost any transitive verb, as well as from unergative verbs:

(13) Bashanyana ba-hobel-l-a morena.
boys SP-dance-appl-fv chief
'The boys are dancing for the chief.'

Nevertheless, benefactive applicative constructions cannot be formed from verbs that are unambiguously unaccusative. Again this is true regardless of whether the theme NP becomes the subject ((14)) or the benefactive NP becomes the subject ((15)).

(14) a. *Lintja li-hol-el-a nkhono.
dogs SP-grow-appl-fv grandma
'The dogs are growing for my grandma.'

b. *Baeti ba-fihl-ets-e morena.
visitors SP-arrive-appl-fv chief
'The visitors have arrived for the chief.'

(15) *Nkhono li-hol-el-a lintja.
grandma SP-grow-appl-fv dogs
'The dogs are growing for my grandma.'

This restriction on applicatives was discovered in Machobane (1989); Alsina and Mchombo (1988) independently found the same paradigm in Chichewa.

Finally, consider the passive-applicative sentence in (16). This sentence is perfectly acceptable in Sesotho with the benefactive NP as the surface subject.

(16)	'Me	o-pheh-ets-o-e	nama
	mother	SP-cook-appl-pass-fv	meat
	'My mother has been cooked the meat.'		

Thus, the surprising contrast between unaccusatives like (8)/(15) and passives like (10)/(16) is found in both English and Sesotho.

Consider next Japanese.[7] (17) is a simple example of an agent-theme-goal verb:

(17)	John-ga	Mary-ni	hon-o	watashi-ta.
	John-nom	Mary-dat	book-acc	pass-pst
	'John passed Mary a book.'			

Whether this should be taken as a dative-shifted sentence comparable to English (4) or a NP-PP structure comparable to (3) is a subtle question given Japanese's relatively free word order and the presence of the particle *ni*, which could be analyzed as either a Case marker or a postposition. In fact, most Japanese specialists agree that (17) is like (4) in English in that the goal asymmetrically c-commands the theme (Hoji 1985); in this respect, (17) is comparable to a dative-shift structure. More controversial is the question of whether (17) is structurally ambiguous, having also an NP-PP structure in which the theme c-commands the goal. This seems to vary from speaker to speaker; see Zushi (1992) for relevant considerations and discussion.

Fortunately, the facts about morphologically related unaccusative verbs are clear. These are possible when the theme receives nominative Case:

(18)	Hon-ga	Mary-ni	watar-ta.
	book-nom	Mary-dat	pass-pst
	'The book passed to Mary.'		

Moreover, the ni-phrase in this structure behaves unambiguously like a PP. For example, some Japanese speakers marginally allow quantifiers to be floated off of *ni*-phrases in transitive double-object sentences like (17). However, such speakers do not allow superficially similar quantifier float in sentences like (18). Thus, one finds minimal contrasts like the following:

(19)	a.	?John-ga	hon-o	otoko-ni	san-nin	watashi-ta.
		John-nom	book-acc	men-dat	three-CL	pass-pst
		'John passed three men books.'				
	b.	*Hon-ga	otoko-ni	san-nin	watar-ta.	
		book-nom	men-dat	three-CL	pass-pst	
		'Books passed to three men.'				

This suggests that (18) is structurally parallel to the acceptable (5) in English. It also implies that there is no Japanese structure parallel to (7) in English; if there were, then the two sentences in (19) would have the same status.

On the other hand, unaccusative versions of sentences like (17) in which the goal is the nominative-marked surface subject are completely impossible:

(20) *Mary-ga hon-o watar-ta.
Mary-nom book-acc pass-pst
'The book passed to Mary.' (lit. 'Mary passed the book.')

Once again, there is a minimal contrast between (20) and passive constructions. In passives, it is perfectly acceptable for the goal phrase to become the nominative-marked subject:

(21) Mary-ga hon-o watas-are-ta.
Mary-nom book-acc pass-pass-pst
'Mary was passed the book.'

Thus, some kind of "dative shift" seems possible in transitives and passives but not in unaccusatives--a generalization that holds true over these three otherwise quite different languages.

Machobane (1989) and Alsina and Mchombo (1988) both explain the ungrammaticality of examples like (14) and (15) in Bantu languages by way of a restriction on applicative formation in the lexicon. The specific condition that they propose makes crucial use of the thematic hierarchy in (2a):

(22) The external argument in an applicative construction must be higher on the thematic hierarchy than the argument introduced by the applicative suffix.

Since the subject of an unaccusative verb is a theme, and this is ranked lower than goal and benefactive in (2a), (22) forbids the applicative affix to add an argument with either of these roles to this type of verb. On the other hand, (22) allows a goal argument to be added to any verb with an agent role; it also allows one to add a lower role (such as a location) to an unaccusative verb. This proposal correctly describes the pattern in question. However, it is not clear whether these researchers want to analyze (22) as an ad hoc property of the grammar of (certain) Bantu languages or as a universal principle grounded in the fundamentals of Theta theory. If we take the first interpretation, then we miss the similarity between the Bantu facts and those of English, Dutch, and Japanese, none of which have (overt) applicative morphology. On the other hand, the proposal makes little sense as a universal, quasi-semantic claim. Surely, it is reasonable a priori to say that an event benefited someone even if that event was not caused or performed by a volitional actor. The grammatical English sentences in (5) are examples of this, as is the Japanese (18); we will see others below in Mohawk and even Sesotho. Thus, we want to derive the lack of these applicatives from principles of syntax, not from general semantic considerations.[8]

4. UNACCUSATIVES WITH THEME SUBJECTS

A full explanation of why there is no dative shift with unaccusative verbs involves two stages. First, one must rule out structures like (7) and (14), where

the theme becomes the subject, and a bare NP goal remains a complement. Second, one must rule out structures like (8)/(15)/(20), in which the goal is the subject and the theme remains a complement. I consider the first set of examples first.

These sentences can plausibly be accounted for in terms of Case theory. Since Burzio (1986) it has generally been assumed that unaccusative verbs do not assign structural accusative Case. When the theme NP moves to the subject position it receives nominative Case from the tensed inflection. What then about the goal NP? The only remaining possibility is that it could receive inherent Case from the verb. However, inherent Case is tied directly to θ-role assignment; only NPs which bear a specific θ-role to a given head can receive inherent Case from that head (Chomsky 1986). Specifically, in double object constructions the theme can receive inherent Case from the verb, but the goal cannot. This is seen in the fact that theme NPs can get the inherent genitive case (realized as *of*) assigned by deverbal nominalizations, but goal NPs cannot:

(23) a. the gift of a book to John
b. *the gift of John (of) a book
(Chomsky (1986:194-95); cf. also Kayne (1984))

These assumptions also provide the basis for one way of explaining certain familiar asymmetries between the two NPs in a double object construction, as discussed in Baker (1988a, 1988b). Thus, we can rule out the unaccusative (24b) and the passive in (24a) in the same way: the goal phrase violates the Case filter in both.

(24) a. ?*The ring was passed Mary t.
b. *The ring passed Mary t. (= (7a))

Note that this analysis is almost the exact opposite of Everaert (1990), who assumed that the goal (not the theme) received inherent Case in double object constructions; hence Everaert ruled out (8) by the Case filter rather than (7).

This analysis makes an interesting prediction. It predicts that if the goal argument happens to be a nominal that for some reason does not need Case, then these sentences should become possible. This seems to be correct. Machobane (1989) points out that ungrammatical sentences like (14) in Sesotho can become grammatical when the benefactive argument is expressed as a pronominal clitic attached to the verb. Thus, there are minimal contrasts like (25).

(25) a.

*Letebele	leo	le-hol-el-e	rona.	SESOTHO
Letelbele	that	SP-grow-appl-fv	us	

‘May that Letebele (clan name) grow up for us!’

b.

Letebele	leo	le-re-hol-el-e.
Letelbele	that	SP-us-grow-appl-fv

‘May that Letebele (clan name) grow up for us!’

Everett (1987) argues that a category which is cliticized onto the verb does not need to receive Case in order to be visible for θ–role assignment; Baker (1988a) makes a similar argument based on noun incorporation and passive morphology.

Hence, the Visibility Condition has been broadened from its original formulation in Chomsky (1981) into (26):

(26) In order for an argument to be visible for θ-role assignment at LF, it must either
(i) be assigned Case, or
(ii) have its head morphologically united with an X^{o}

The theme NP in (25b) gets nominative Case in the subject position, while the goal is visible apart from Case, due to cliticization. Therefore, the example is grammatical.

The analysis also predicts that applicatives of unaccusative verbs should be acceptable if there is a language-specific way of assigning structural Case inside the VP. This seems to be true in Mohawk.[9] Mohawk is like Sesotho in that it lacks any overt adposition or Case marker for goals. Mohawk is also like Sesotho in that it has a productive applicative construction; a simple example is given in (27).

(27) Wa-hi-nohare-'s-e' ne atya'tawi.
fact-1sS/MsO-wash-ben-punc NE shirt
'I washed the shirt for him.'

Such applicatives can be formed from unergative verbs as well as from a wide variety of transitive verbs. Strikingly unlike the situation in Sesotho, however, applicative morphology can also attach to many unaccusative verbs. Two examples are:

(28) a. Ukw-ate-nohare-'s-e' ne atya'tawi.
fact/1sO-srfl-wash-ben-punc NE shirt
'The shirt came clean for/on me.'

b. Wa-ho-wis-v-'s-e' ne Sak.
fact-MsO-glass-fall-ben-punc NE Sak
'The glass fell on Sak.'

(The fact that the non-goal NP has been incorporated into the verb in (28b) gives independent evidence that the verb is unaccusative, given the theory of noun incorporation in Baker (1988a).) This indicates once again that the restriction in (22) cannot be a universal one, even for languages with true applicatives. Crucially, in these examples the benefactive NP triggers *object* agreement on the verb; if one puts subject agreement on the verb instead, the result is ungrammatical:

(29) a. *Wa'-k-ate-nohare-'s-e' ne atya'tawi.
fact-1sS-srfl-wash-ben-punc NE shirt
'The shirt came clean for/on me.'

b. *Wa-ha-wis-v-'s-e' ne Sak.
fact-MsS-fall-ben-punc NE Sak
'The glass fell on Sak.'

According to the theory of agreement developed in Baker (in press:chapter 5), this indicates that the benefactive NP is still inside the VP at the point in the derivation that feeds the PF component.

Sentences like (28) are made possible by two special properties of Mohawk. First, theme nominals can incorporate into the verb. This means that they do not need to receive nominative Case from Infl; rather, they pass the Visibility Condition in (26) by clause (ii). Second, the nominative Case associated with Infl can be assigned inside the VP in Mohawk. This seems to be a parametric option, available in some languages but not in others. For example, den Besten (1985) argues that this type of Case assignment is possible in German examples like (30).

(30) ...daß [$_S$ meinem Bruder [$_{VP}$ deine Musik nicht gefällt]].
that my brother-dat your music-nom not please
'...that my brother doesn't like your music.'

Baker (in press) gives independent evidence that this is possible in Mohawk as well. Thus, the proper analysis of (28b) in Mohawk is sketched in (31).

(31) e Infl [$_{VP}$ glass$_i$-fall t_i Sak]
nominative

In conclusion, we see that prepositionless theme-goal constructions in which the goal remains in the VP are actually acceptable in some languages. When such sentences are ruled out, they are ruled out for relatively superficial Case-theoretic reasons.

Before going on, one complication must be mentioned. More detailed comparative work reveals an important difference between the two structures compared in (24). Unaccusative sentences like (24b) are ruled out more or less universally, whereas passive sentences comparable to (24a) are sometimes judged acceptable by speakers. Thus, sentences like (32) are rejected by most American English speakers, but are accepted by some British speakers, depending on obscure lexical factors.[10]

(32) a. (*)The ring was given Mary.
b. (*)A beer was opened Max.

Similarly, passives of applicatives in which the theme becomes the subject are acceptable in Sesotho:

(33) Nama e-pheh-ets-o-e 'me.
meat SP-cook-appl-pass-fv mother
'The meat has been cooked my mother.'

Directly parallel sentences are not possible in the related Chichewa, however (Alsina and Mchombo 1988; Baker 1988b).[11] This lack of similarity raises some doubt as to whether a unified account of (24a) and (24b) is desirable. The problem is not as serious as it may seem, however; I return to it in section 6 after a more detailed analysis of the passive has been introduced.

5. UNACCUSATIVES WITH GOAL SUBJECTS

Next I move on to the task of explaining the ungrammaticality of unaccusative sentences in which the goal is the surface subject. This is more interesting for two reasons. First, the ungrammaticality of these sentences is more universal, holding without exception across the languages and dialects in my sample. Second, it is more surprising, because it is here that the parallelism between unaccusative verbs and passives fails completely, as shown again in (34).

(34) a. Mary was passed t a ring. (= (10a))
b. *Mary passed t a ring. (= (8a))

This lack of parallelism implies that one cannot plausibly account for this pattern in terms of Case theory alone. In (34b) the benefactive NP *Mary* gets nominative Case from Infl, while *a ring* gets inherent Case from the verb. As the theme of the verb, *a ring* is fully qualified to receive such Case. Any simple-minded adjustments to these assumptions would incorrectly rule out the acceptable (34a) as well.

Since Case theoretic problems would be solved if the benefactive NP could move to subject position in sentences like (34b), I conclude that such movement must be impossible. This result becomes understandable once one takes into account the theory of dative shift presented in Larson (1988), together with some innovations from Travis (1991). Larson argues that verbs can take only a single complement (cf. also Kayne (1984)). This implies there must be a structural asymmetry between themes and goals: goals project as the complements of the verb, while themes are associated with a higher position, as specifier of the VP. Hence, the base structure of *John passed the ring to Mary* ((3a)) in English is something like (35).

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(35)        IP
     NP            I´
      e      I            VP
           past    NP           V´
                  John    V           AspP
                        pass    NP          Asp´
                                 e     Asp         VP
                                        t     NP          V´
                                           the ring   V         PP
                                                      t      to Mary
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This structure correctly accounts for the fact that the theme NP acts like it c-commands the goal NP but not vice versa in sentences like (3).

Crucially, however, the c-command relationship is reversed in dative-shifted sentences like *John passed Mary the ring* ((4a)): here the goal phrase c-commands the theme phrase, but not vice-versa (Barss and Lasnik 1986). Larson accounts for this in terms of a passive-like NP movement. Following Travis (1991), I assume that the landing site of this movement is the specifier of an Aspect Phrase which immediately dominates the lower VP. Hence, the structure of (4a) is roughly (36).[12]

(36) IP

NP I´

e I VP

past NP V´

John V AspP

pass NP Asp´

Mary$_i$ Asp VP

t NP V´

the ring V NP

t t$_i$

Furthermore, I assume that unergative verbs appear in exactly the same structures as transitive verbs, except that the specifier of the lower VP is left empty, because the verb takes no theme argument. (Alternatively, there might be a "cognate object" generated in this position; compare Hale and Keyser (1993).) If an unergative verb appears with a goal or benefactive phrase, that phrase can either show up as a PP complement as in (35), or as an NP that moves to the specifier of AspP as in (36). This latter structure is the one associated with applicatives of unergative verbs, such as sentence (13) in Sesotho.

Consider now the structure of sentences with the unaccusative variant of *pass*. Here the underlying structure should be identical to that of the transitive variant, except that the higher VP shell is not generated, because there is no agent θ-role to assign. This does not disrupt the structure in (35) in any significant way; the theme *the ring* simply raises to the specifier of IP (possibly via the specifier of AspP) to receive Case, and nothing else changes. Thus, (37) is the analysis of *The ring passed to Mary* ((5a)):

(37) IP

NP I´

e Infl AspP

past NP Asp´

e Asp VP

NP V´

the ring V PP

pass to Mary

Consider, however, what a dative shift movement similar to (36) would look like if it started from an underlying structure like (37). If this were allowed, then the goal NP should be able to move on from the specifier of aspect phrase to the specifier of IP, generating ungrammatical sentences like *Mary passed the ring* (8a/34b):

(38) IP

NP I´

e I AspP

past NP Asp´

Mary_i Asp VP

pass NP V´

the ring V NP

t t_i

In purely geometrical terms, the illicit movement in (38) is identical to the grammatical movement in (36). There is, however, one crucial difference. In (38), the VP which the goal phrase moves out of is “thematically complete” in the sense that all of the thematic roles determined by this version of *pass* are assigned within that VP. In (36) on the other hand, the VP which the goal phrase moves out of is not thematically complete in this sense: this version of *pass* takes an agent phrase that is not assigned until the higher VP shell. Suppose that this notion of thematic completeness is included in Chomsky’s notion of a complete functional complex.[13] Then the desired distinction between (36) and (38) follows from known principles of UG plus the classical assumption from the Extended Standard Theory that NP traces are anaphors (Chomsky 1976; Chomsky 1981). The relevant notions of Binding theory can be characterized roughly as in (39), based on Chomsky (1986).

(39) a. A *complete functional complex* (CFC) is a category in which all the grammatical functions compatible with a head are present, and all the head’s θ-roles are assigned.

b. The *governing category* of an anaphor X is the smallest CFC containing X, a governor of X, and a c-commanding NP distinct

from X.

c. Anaphors (including NP trace) must be bound within their governing category.

According to these definitions, the NP-trace in (36) is bound within its governing category, but the NP-trace in (38) is not. Thus, (38) is ruled out as a kind of Specified Subject Condition violation. This is the core of my explanation of why unaccusative verbs cannot undergo dative shift crosslinguistically.

In this analysis it is the presence of the theme that prevents the goal from becoming the subject of the clause, because the theme NP counts as a kind of "specified subject". This predicts that if the theme were somehow eliminated, movement of the goal should become possible. This is confirmed by the Sesotho contrast shown in (40).

(40) a. *Baeti ba-fihl-ets-e morena. (=(14b))
visitors SP-arrive-appl-fv chief
'The visitors have arrived for the chief.'

b. Morena o-fihl-ets-o-e ke-baeti.
chief SP-arrive-appl-pass-fv by-visitors
'The visitors have arrived for the chief.'

(40b) is the passive equivalent of the ungrammatical sentence in (40a); surprisingly, it is grammatical. Apparently, passive morphology in Sesotho has the unusual but not unprecedented property of being able to suppress the theme argument of an unaccusative verb.[14] Given this, the lower VP in a structure like (38) no longer qualifies as a complete functional complex, since it does not have a structural subject. Hence, the goal argument of the verb is not prevented from moving out of that VP, eventually reaching a position where it can receive nominative Case from Infl.

Note that in order for the analysis I have presented to work, certain quite precise assumptions must be made. To the degree the analysis is deemed successful, it counts as support for those assumptions, some of which bear on topics of recent interest within Principles and Parameters theory.

First and most obviously, the analysis supports Larson's basic assumptions about the phrase structure of double object verbs. Larson's idea that theme NPs count as "inner subjects" in non-dative shifted structures had only rather abstract motivation. Here we have found evidence that such NPs may under certain circumstances count as subjects for binding theory purposes, trapping goal phrases inside their c-command domain. On the other hand, it is not easy to see how a more traditional theory which had both themes and goals as complements of V could account for the fact that goals cannot reach the subject position when the verb is unaccusative.

Second, the analysis crucially assumes that goals project into a lower structural position than themes, in accordance with the Larson/Baker thematic hierarchy in (2c). If the goal were not generated lower than the theme, the theme could not prevent the goal from becoming a subject. Once again, my proposal is nearly the opposite of Everaert's (1990), because it rules out (8) by the thematic hierarchy rather than (7). While the two approaches appeal to very much the same range of concepts, I believe that mine is correct because it generalizes better to other language families. I take this conclusion about the

thematic hierarchy to be the most important implication of the analysis, and single it out for further discussion in section 7.

Third, the analysis supports Travis' (1991) revision of Larson's theory over the original. Larson (1988) assumed that the landing site for the moved NP in dative shift constructions was the specifier position of the smallest VP. This position was freed up by a kind of suppression of the theme argument, which resulted in the theme's being generated in an adjunct position. However, there is no obvious reason why this suppression of the theme should not be just as possible with unaccusative verbs as with transitive ones. If it were, then the theme would not prevent the goal from moving to subject position in unaccusatives. Indeed, Larson's original approach would lose the striking contrast between (15) and (40b) in Sesotho, since the theme is supposedly suppressed or demoted in both. Travis (1991), on the other hand, argues that the landing site of dative-shift-like movements is the specifier of Aspect Phrase, a functional category outside of the smallest VP but inside the outer VP shell. This means that no suppression of the theme argument is necessary to allow dative shift in a transitive structure. This in turn implies that movement of the goal NP will be blocked if and only if the minimal VP counts as a CFC, as desired.

Fourth, it is worth emphasizing that this analysis confirms the classical Chomskian view that NP-traces are anaphors. This in turn supports the deeper claim of the EST/GB/P&P tradition that grammatical function changing is not a unique phenomenon, governed by a special section of linguistic theory; rather it shares important properties with other linguistic domains, such as antecedent-anaphor relationships and operator-variable relationships (Chomsky 1981). Recent work on "super-raising" constructions has suggested that this property of NP-traces may be completely redundant: any construction which is ruled out by the binding theory is also ruled out by the antecedent-government condition of the ECP. However, we now see that this is not so: the crucial structure in (38) is ruled out by the Binding theory but *not* by standard formulations of the ECP, because the goal phrase is always governed by its theta-marker. If one switches to a framework built around Rizzi's (1990) Relativized Minimality condition instead, then one has the reverse problem. Both (36) and (38) involve NP movement of the goal over an A-position specifier. Thus neither is a "shortest" movement in the intuitive, pretheoretic sense of the term, and both are in danger of being ruled out by a condition that requires shortest movement (Chomsky 1993). What seems to be required is that the notion of a CFC be built into the concept "shortest movement" such that two positions are only equidistant (in the technical sense) if they are contained in the same CFC. This would be essentially an updated "minimalist" formulation of the older claim that NP traces are anaphors.

Finally, this analysis seems to be incompatible with Belletti and Rizzi's (1988) influential theory of psychological verbs. On their account, the underlying structure of (the Italian equivalent of) a sentence like "The test worried/frightened/bothered Mary" is (41):

(41) IP

NP I´

e Infl VP

V´ NP

V NP Mary

worry the test

This structure is identical to (38) in all relevant respects. In particular, the NP *the test* moves out of a CFC; hence the derivation should be blocked for the same reasons that (38) is. We cannot rule out one and allow the other. Perhaps this contradiction is to be resolved by paying more careful attention to the details of Theta theory. With unaccusative verbs like *pass* it is relatively easy to identify the θ-roles by direct comparison with the transitive version of *pass*, which is a perfectly ordinary agent-theme-goal verb. In contrast it is much less clear what the θ-roles of a verb like *worry* are. Belletti and Rizzi refer to *the test* as the theme of the verb, but it is not at all clear that this is a theme in the sense originally defined by Gruber and Jackendoff--i.e. the first argument of some kind of a ‘go’ or ‘be’ predicate at some level of representation. Meanwhile, Belletti and Rizzi refer to *Mary* as the bearer of the experiencer thematic role--a term which plays no role at all in the Gruber/Jackendoff conception of thematic roles. Perhaps the peculiar thing about psychological verbs is precisely this: that there is no unique best fit between them and the standard thematic roles, as proposed by Dowty (1991). This would make different mappings onto surface structure possible with out any appeal to NP movement. This in turn would imply that one must take a semantically-oriented approach to many of the facts that Belletti and Rizzi appeal to in motivating the analysis in (41), as argued in Pesetsky (1995). Thus, I tentatively conclude that psych verbs do not in fact shed much light on the questions of how themes and goals are projected or their possibilities for movement. Much more direct evidence comes from the inchoative verbs that been provided my primary focus.

6. PASSIVES AND DATIVE SHIFT

So far, we have only a partial explanation of the contrast in (34): I have explained why the unaccusative structure in (34b) is bad, but not why the passive structure in (34a) is good. Recall that this contrast is remarkably consistent across languages; the same difference is found in (15) vs. (16) in Sesotho, and in (20) vs. (21) in Japanese. Mohawk does not have a true verbal passive construction, but the same contrast can be found if Baker (in press) is correct in analyzing morphological reflexive constructions as being similar to passive constructions in syntactic structure (see Marantz (1984) for a general statement of this type of analysis). Thus, one finds minimal pairs like the one in (42), where the goal NP triggers subject agreement with a (passive-like) reflexive verb but not with an unaccusative one.

(42) a. Wa’-k-atate-nohare-'s-e' ne atya'tawi.
fact-1sS-refl-wash-ben-punc NE shirt
‘I washed the shirt for myself.’
(lit. ‘I was self-washed t the shirt.’)

b. *Wa’-k-ate-nohare-'s-e' ne atya'tawi.

fact-1sS-srfl-wash-ben-punc NE shirt
'The shirt came clean for/on me.' (lit. 'I washed t the shirt.')

These facts strongly suggest that one cannot have a lexical account of passives. Such accounts typically treat passive verbs more or less as a special kind of unaccusative verb, derived in the lexicon by productive derivational morphology. This kind of approach can account for the many similarities between passives and unaccusatives pointed out in Burzio (1986) and other work. However, (34) shows an important and crosslinguistically valid difference between passives and unaccusatives that such an account cannot readily explain.

This contrast becomes understandable, however, once the theory presented here is combined with a syntactic theory of passive such as the one proposed in Baker, Johnson, and Roberts (1989). This theory claims that the passive morpheme is a distinct element in the syntax that receives the agent θ-role from the verb. Among other things, this forms the basis of an account of the "implicit argument effects" found in passives. For concreteness, we may suppose that the passive morpheme is generated in the head of Aspect Phrase, and that it combines with the verb by way of verb raising. Then the syntactic structure of *Mary was passed the ring* ((34a)) would be (43).

(43) IP

NP I´

e Infl AspP

was NP Asp´

Mary Asp VP

-EN NP V´

the ring V NP

pass t

Here the lower VP does not count as a CFC because the verb's agent role is not assigned within it. Hence, the goal NP can move to the specifier of Aspect Phrase. On the other hand, the Aspect Phrase is not a governing category either, because it has no structural subject distinct from *Mary*. Hence, the goal NP can move on to the specifier of IP and receive nominative Case. Under these precise conditions, the specifier of Aspect phrase functions as a kind of "escape hatch" permitting movement of the goal. This structure correctly accounts for the similarities between passives and unaccusatives, while allowing dative shift in passives only.

We are also now in a position to return to the residual problem left open in section 4. There it was pointed out that passive clauses with a bare goal in the VP and a theme subject are grammatical in some languages, even though similar unaccusative structures are not. This asymmetry arises in British English, Sesotho, and Japanese, although not in American English, Chichewa, or Mohawk. (44) gives a typical contrast of this type in Sesotho.

(44) a. *Lintja li-hol-el-a nkhono. UNACCUSATIVE VERB
dogs SP-grow-appl-fv grandma
'The dogs are growing for my grandma.'

b. Nama e-pheh-ets-o-e 'me. PASSIVE VERB
meat SP-cook-appl-pass-fv mother
'The meat has been cooked my mother.'

Implicit in my account of the deviance of sentences like (44a) was an appeal to Burzio's Generalization. The standard form of this principle is given in (45).

(45) A verb assigns (structural) accusative Case if and only if it assigns an external θ-role.

Since unaccusative verbs by definition assign no external θ-role, they can never assign structural Case. Hence, they can never Case-mark a bare NP goal, and sentences like (44a) violate the Case filter (unless there is some other source of Case, as in Mohawk).

Note, however, that under the analysis just reviewed passive constructions have the opposite status from unaccusatives with respect to (45). Passives *do* assign an external θ-role in the syntax--to the passive morpheme. Thus, (45) implies that passive verbs should be accusative Case assigners. In many languages, this makes little difference. The reason is that the passive morpheme counts as an argument of the verb, hence it often absorbs the structural Case feature of the verb (see Baker, Johnson, and Roberts (1989) for discussion). While the verb root is technically a structural Case assigner, this Case is discharged within the verb complex itself, so there is still no structural Case to assign to the goal NP. In this way, sentences like (44b) are ruled out as before in American English, Chichewa, and Mohawk. However, Baker (1988a) suggests that some languages--including presumably British English, Sesotho, and Japanese--allow their verbs to assign two (or more) structural Cases.[15] In this type of language, passive morphology may absorb one of the available Case features, but the verb still has at least one structural Case left over. This Case feature is thus neither absorbed by the passive morpheme nor "turned off" by Burzio's Generalization. Since structural Case can be assigned to any NP regardless of its θ-role, it can license the goal in (44b). It follows that such sentences are grammatical in all and only languages with these Case properties.

In addition to filling a hole in the account, this analysis also gives further evidence for a major result of this section: that passives are not merely unaccusative verbs derived by productive lexical morphology. On the contrary, their syntactic structure is rather different.[16]

7. IMPLICATIONS FOR THE PROJECTION OF SYNTACTIC STRUCTURE

Finally, let us return to the issue of thematic hierarchies laid out in the introduction. There is was pointed out that transitive verbs give mixed evidence as to whether themes or goals should be ranked higher on the thematic hierarchy. In some languages and some constructions, themes seem to be more prominent than goals; in other languages and other constructions, goals seem to be more

prominent than themes. It is not clear which constructions are basic and which are derived, or indeed whether they all can be basic in some situations.

Consider the facts about unaccusatives in this light. Here, I have claimed that there is little or no conflicting evidence: themes always have prominence over goals in the absence of an agent. Thus, the theme can occupy the subject position in the context of a goal. While Case theory pressures rule out some of the most obvious examples of this type in certain languages, the violation is relatively superficial and can often be avoided by some means or another: by making use of a goal preposition in English and Japanese, by assigning nominative Case inside VP in Mohawk, by cliticizing the goal in Sesotho. In contrast, the goal can never occupy the subject position in the context of a theme in any of the languages under consideration. Crucially, this generalization is true not only for English, where dative shift is optional, but even for languages like Sesotho and Mohawk, which otherwise seem to be "goal-dominant" due to the absence of (overt) goal-prepositions.[17] Now if themes outrank goals in the absence of agents, presumably they also outrank goals in more complex constructions that include agents as well. Otherwise, one would be forced to assume some kind of context-sensitive thematic hierarchy, in which the relative values of theme and goal depend on the presence or absence of other material. As far as I know, this has never been proposed; indeed, it violates the spirit of a consistent thematic hierarchy. Thus, the Larson/Baker hierarchy of Agent > Theme > Location/Goal in (2c) is the correct one, finding relatively direct support even within languages that otherwise seem to call for one of the other hierarchies.

What then about transitive verbs, where one sees so much variation? Clearly there can be no solution purely in terms of a thematic hierarchy. Rather, the solution adopted here (following Larson) is that goals sometimes become prominent over themes because of NP movement. This is possible only with transitive verbs because the extra structure generated in order to assign the agent role in Larson's theory also creates a legitimate landing site for this type of NP movement. A more articulated representation thus makes possible a more complicated derivation.

In closing, I would like to point out two general reasons why I consider this result a promising one that points to a more elegant and constrained theory of the argument structure-phrase structure association. The Kiparsky/Bresnan hierarchy in (2a) requires at least four levels of ranking, given that it distinguishes goals and locations. In contrast, the Larson/Baker hierarchy requires only three primitive levels of ranking.[18] Interestingly, X´ theory traditionally defines exactly three types of positions with respect to a head: complement of the head, specifier of the head, and positions outside of the projection of the head.[19] If the role of the thematic hierarchy is to associate semantic arguments of a head with syntactic positions, and there are three such positions available, it makes sense that the hierarchy should distinguish exactly three categories. Thus, I propose (46) as universal mapping principles, thereby giving content to the "Uniformity of Theta Role Assignment Hypothesis" (UTAH) of Baker (1988a) (see also Baker (in press)).

(46) a. Path arguments (including goals, benefactives) map onto complement of V.
b. Theme/patient arguments map onto the (lowest) specifier of V´.
c. Agent/actor arguments map onto a position outside the (minimal) VP.

If these principles are correct, then the thematic hierarchy can be dropped from syntactic theory altogether. The thematic hierarchy limits the positions of arguments in phrase structure relative to one another; these relative orderings can be seen as direct corollaries of the absolute structural positions of arguments defined by (46).

The second advantage of the Larson/Baker hierarchy is that it does not force one to distinguish the PPs in sentences like (47) thematically.

(47) a. John threw the ball to Bill
b. John threw the ball (all the way) to the fence.
c. John threw the ball toward the fence.
d. John threw the ball into the dugout.

The PPs in (47b,c,d) are locational paths on anyone's theory. It seems artificial to say that the one in (47a) is not a locational path as well. Of course, (47a) differs from (47b,c) in that it may (or even must) undergo dative shift in some languages; this is part of the motivation for distinguishing them in the Kiparsky/Bresnan hierarchy. My claim, however, is that this is not a *thematic* distinction at all. Rather it is due to other factors. For example, goal/benefactive prepositions are often redundant semantically, hence deletable, whereas other locative prepositions generally are not (Larson 1988; Baker 1992). Second, goal/benefactive prepositions typically take animate NP objects, while other locative prepositions do not. Animate NPs differ in their Case theoretic properties from inanimate NPs in many languages; this can encourage or even force dative shift movement. However, I believe that encoding these other factors in the *thematic* hierarchy is inappropriate. It muddles things that are both more elegant and more explanatory when kept separate.[20]

NOTES

* This work is a revised and expanded version of a paper given at NELS 23, Indiana University, and the 6th Conference on Grammatical Relations. The original research it is based on was supported by the Social Sciences and Humanities Research Council of Canada, grant #410-90-0308, and by FCAR of Quebec, grant #91-ER-057. The article was finished while the author was a fellow at the Center for Advanced Study in the Behavioral Sciences, supported by NSF grant SES-9022192. I am thankful for these sources of support. I also wish to thank M. Zushi, L. Travis and D. Pesetsky for their help discussing these issues. Finally, I thank 'Malillo Machobane for help with the Sesotho data, Masanori Nakamura, and Kikuyo Ohkado for help with the Japanese data, and Carolee Jacobs for help with the Mohawk data. Glosses for the languages discussed follow the glossing conventions of the cited sources.

[1]This is how this statement is phrased in the references cited. However, the reference to the level of D-structure is not crucial. If, following Chomsky (1993), this level is removed from the theory, the same principle can easily be restated as a condition on the operation of the "Merge" operation that builds phrase structure, or (allowing for chains) as a condition on LF.

[2]Some researchers distinguish goal, benefactive and recipient θ–roles. For purposes of this article, I do not make such a distinction, but rather refer to all of them as goals. This is partly an expository choice and partly a theoretically motivated one, given that I see (46) as a unified principle. More generally, I adopt a coarse-grained thematic theory, also not distinguishing patients from themes or agents from actors and causers.

[3]Of course, no generalization about English goes unchallenged. Pesetsky (personal communication) points out (iii) as a possible counter-example:

(i) I got a book to Mary.

(ii) I got Mary a book.

(iii) Mary got a book.

(iv) *A book was gotten by Mary.

(iii) seems to be of the same type as (8). The ungrammaticality of (iv) apparently confirms this, since unaccusative verbs cannot be passivized (see Baker, Johnson, and Roberts (1989) and references cited there). However, a closer look suggests that different senses of the verb *get* are confounded here. Semantically, (ii) is not the dative-shifted version of (i), but rather of a sentence like "I got a book for Mary". Indeed, (i) does not seem to undergo dative shift at all. However, (iii) seems to be semantically related to (i) rather than (ii). The fact that (iii) cannot be an unaccusative version of (ii) is explained by the theory I will present. What is not explained on anyone's account is the grammatical reading of (iii), and its possible relationship to (i). Rather than pursuing this single example, I content myself with pointing out that *get* in English has unique properties and occurs with a variety of other argument structures which may or may not be related to this problem.

Another class of verbs which may be counterexamples includes *inherit*, and *receive*. If possessors are a subclass of goals, as in a Gruber/Jackendoff style thematic analysis, then the sentences in (v) have goal subjects and theme objects. In this respect they are comparable to (8).

(v) a. Mary inherited the ring.
b. Max received a beer.

However, these verbs can be passivized, with the supposed 'goal' realized as the object of a by-phrase:

(vi) a. The ring was inherited by Mary.
b. The first beer was received by Max. (marginal for some speakers)

This shows that the subjects in (v) must be true external arguments of the verbs, rather than derived subjects. While they are certainly not canonical agents, they do arguably have more proto-agent properties than anything else in the clause; this would allow them to be treated as agents within a prototype theory of thematic roles like that developed in Dowty (1991). This may also explain why these verbs do not undergo causative/inchoative alternations, as shown in (vii):

(vii) a. *Susan inherited Mary the diamond ring.
b. *John received Max a beer.

Paul Postal (personal communication) points out one further class of verbs that may be relevant. This is exemplified by the verb *reach* in sentences like *The letter reached John on Thursday*. This arguably has a theme subject and a goal object, and hence is thematically similar to the sentences in (7). Baker (in press) includes some discussion of these fascinating verbs crosslinguistically; there I argue that such verbs do have theme subjects, but their objects are not goals but rather "reference objects"--the same theta role borne by the object of a locative preposition. If this is correct, then they are not directly relevant to the issue at hand.

[4]There is considerable idiolectal variation among speakers of English as to which verbs allow dative shift and which verbs allow passive from a dative shift source. For many speakers, examples corresponding to the preposition *for* are more limited than those corresponding to the preposition *to*. Here I assume a fairly liberal dialect (that of the author) to facilitate comparison with other languages. These concerns about productivity do not seem to arise in the other languages considered in this article.

[5]The RG literature does have various observations that 3 can advance to 2 only if the clause is transitive--i.e. if the clause has both a 1 and a 2. However, these are stated as language particular conditions, and must be because "dative shift" is possible with unergative verbs in some languages, as we shall see.

The Lexical Functional Grammar literature touches on a similar paradigm in the context of applicative verbs in Bantu languages. This is discussed in the next section.

[6]The Sesotho data comes from Machobane (1989; personal communication). The abbreviations used in the Sesotho glosses are: appl, applicative; fv, final vowel (a mood marker); pass, passive; SP, subject prefix.

[7]Japanese data comes primarily from Zushi (1992; personal communication). Abbreviations used in the Japanese glosses include: acc, accusative; cl, classifier; dat, dative; nom, nominative; pst, past.

[8]It is important to point out that (22) captures a slightly wider range of facts than those reviewed here. For example, Alsina and Mchombo (1988) show that instrumental applicatives cannot be formed on unaccusative verbs, either--a generalization that they also derive from (22). This restriction probably does follow from quasi-semantic theta-theoretic considerations, however. Observationally, it seems to be true that instruments cannot appear with pure unaccusative verbs across languages, regardless of how the instrument is expressed (cf. ?**The door opened with a key*, where a marginal middle interpretation must be ignored). This makes sense if instruments are analyzed not as a primitive thematic role but as a kind of intermediate agent-patient, along the lines of Jackendoff (1987). Then it is semantically deviant to have a "secondary agent" without having (at least an implicit) primary agent.

See note 20 for discussion of the third case that Machobane, Alsina, and Mchombo take to be relevant to (22).

[9]Mohawk data comes from the author's field notes, collected at Kahnawake Quebec between 1989 and 1993. See Baker (in press) for discussion. Abbreviations used in the Mohawk examples are: ben, benefactive; fact, factual mood; punc, punctual aspect; refl, reflexive; srfl, semireflexive; 1sS, first singular subject prefix; MsO, masculine singular object prefix; 1sO, first singular object prefix; MsS, masculine singular subject prefix. *Ne* is a very common particle whose exact meaning is unclear.

[10]For example, the verb typically must be a canonical dative-shift verb such as 'give' or 'send', and the goal must be short--a pronoun or simple proper name. In fact, the specific sentences quoted may not be acceptable for any speaker, given that most British speakers I have asked are conservative dative-shifters who are already rather uncomfortable with the sentences in (4) and (10).

[11]However, some dialects of Chichewa do allow the equivalent of (33), judging by Trithart (1977). There are some strange restrictions on (33) even in Sesotho; for example (33) cannot have an agent in a by-phrase, which is otherwise possible in the language. To complete the picture, sentences like (32/33) are possible in Japanese, but not in Mohawk.

[12]Here I put aside tricky and controversial questions concerning the presence of the preposition *to* in (35) and its absence in (36). For current purposes, we can follow Larson in assuming that *to* is merely a Case marker absorbed in the passive-like process that derives (36). In fact, I believe that *to* is a head involved in

θ-marking in these structures, and that part of the difference between (35) and (36) is that the former has an overt P while the latter has a null P (Baker 1992). However, this issue is somewhat orthogonal to the point at hand and reviewing it would take us far afield.

[13]Larson (1988) also makes this assumption for overt anaphors such as *herself* and *each other*.

[14]This property has been documented for passives in languages such as Lithuanian and Turkish. See Baker (1988a) for references and a possible analysis.

[15]Importantly, this property can be independently motivated for the Bantu languages in question by other facts about three-argument verbs, as shown in Baker (1988a). See also Bresnan and Moshi (1990) for a somewhat different analysis of the contrast between Sesotho-like languages and Chichewa-like languages, as well as a very systematic presentation of the range of evidence relevant to this question.

[16]It should be noted that this analysis uses Burzio's Generalization as an actual principle of grammar. Crucially, the facts do not follow in any obvious way from more functional/intuitive statements of Burzio's Generalization, such as "a construction has only as many structural Cases as it needs to license the arguments of its semantic head". Crucially (44a) has fewer Cases than it needs, due to (45). If correct, this may suggest that Case theory cannot be reduced simply to a theory of argument structure.

[17]In the terminology of Dryer (1987), Mohawk and Sesotho are "primary object" languages.

[18]Certain other thematic roles can be defined in terms of the basic ones. For example instrument can plausibly be analyzed as an intermediate agent/theme, along the lines of Jackendoff (1987); see also note 8. From this, its typical position as lower than a pure agent and higher than a pure theme can be derived. Zushi (1992) makes a similar argument for a certain class of source phrases in Japanese.

[19]As far as I can see, the form but not the substance of this proposal is affected by Chomsky's recent (1994) proposal to eliminate stipulated bar-levels in the theory of phrase structure. In particular, his theory still draws a three-way distinction between complements of a head, specifiers of a head, and positions outside the projection of a head--although the first two notions are defined more indirectly, because there is no such a thing as V´. How exactly to integrate the UTAH with Chomsky's most recent proposals merits more careful consideration than I can give here, however.

[20]One specific case in point relevant to the concerns of this paper is the contrast in (i), discussed by both Machobane (1989) and Alsina and Mchombo (1988):

(i) a. *Ngoana o-kul-el-a Lineo. SESOTHO
child SP-be.ill-appl-fv Lineo
'The child is ill on Lineo.' (Lineo is adversely affected)

b. Ntate o-kul-el-a sepetlele.
father SP-be.ill-appl-fv hospital
'My father is ill in the hospital.'

They interpret this contrast in the context of their condition (22) as evidence that goals are higher on the thematic hierarchy than themes, while locations are lower. However, the current theory invites an analysis of this in which the distinction is Case theoretic rather than Theta theoretic in nature. In (ia) the affected object Lineo violates the Case filter as discussed in section 4. In (ib), on the other hand, the location sepetlele does not need to receive Case, because it is morphologically oblique; indeed, such phrases in Sesotho behave like PPs in a variety of ways (see

Baker (1992) for discussion). Given this, no distinction in terms of the thematic hierarchy is necessary for these data.

REFERENCES

Alsina, Alex and Sam Mchombo: 1988, 'Lexical Mapping In the Chichewa Applicative Construction', paper given at the 19th Annual African Linguistics Conference, Boston University, April 1988.

Aoun, Joseph and Audrey Li: 1989, 'Scope and Constituency', *Linguistic Inquiry* **20**, 141-172.

Baker, Mark: 1988a, *Incorporation: a Theory of Grammatical Function Changing*, University of Chicago Press, Chicago.

Baker, Mark: 1988b, 'Theta Theory and the Syntax of Applicatives in Chichewa', *Natural Language and Linguistic Theory* **6**, 353-389.

Baker, Mark: 1989, 'Object Sharing and Projection in Serial Verb Constructions', *Linguistic Inquiry* **20**, 513-553.

Baker, Mark: 1992, 'Thematic Conditions on Syntactic Structures: Evidence From Locative Applicatives', in I. M. Roca (ed.): *Thematic Structure: Its Role in Grammar* Foris, Berlin, pp. 23-46.

Baker, Mark: in press, *The Polysynthesis Parameter*, Oxford University Press, New York.

Baker, Mark, Kyle Johnson, and Ian Roberts: 1989, 'Passive Arguments Raised', *Linguistic Inquiry* **20**, 219-251.

Barss, Andrew and Howard Lasnik: 1986, 'A Note on Anaphora and Double Objects', *Linguistic Inquiry* **17**, 347-354.

Belletti, Adriana, and Luigi Rizzi: 1988, 'Psych-verbs and θ-theory', *Natural Language and Linguistic Theory* **6**, 291-352.

Besten, Hans den: 1985, 'The Ergative Hypothesis and Free Word Order in Dutch and German', *Studies in German Grammar*, Foris, Dordrecht.

Bresnan, Joan and Joni Kanerva: 1989, 'Locative Inversion in Chichewa: A Case Study of Factorization in Grammar', *Linguistic Inquiry* **20**, 1-50.

Bresnan, Joan and Lioba Moshi: 1990, 'Object Asymmetries in Comparative Bantu Syntax', *Linguistic Inquiry* **21**, 147-185.

Burzio, Luigi: 1986, *Italian Syntax: A Government-Binding Approach*, Reidel, Dordrecht.

Carrier-Duncan, Jill: 1985, 'Linking of Thematic Roles in Derivational Word Formation', *Linguistic Inquiry* **16**, 1-34.

Chomsky, Noam: 1976, 'Conditions on Rules of Grammar', *Linguistic Analysis* **2**, 303-351.

Chomsky, Noam: 1981, *Lectures on Government and Binding*, Foris, Dordrecht.

Chomsky, Noam: 1986, *Knowledge of Language: Its Nature, Origin, and Use*, Praeger, New York.

Chomsky, Noam: 1993, 'A Minimalist Program for Linguistic Theory', in K. Hale and S. J. Keyser (eds.): *The View From Building 20*, MIT Press, Cambridge, Massachusetts, pp. 1-52.

Chomsky, Noam: 1994, 'Bare Phrase Structure', unpublished, MIT.

Dowty, David: 1991, 'Thematic Proto-roles and Argument Selection', Language **67**, 547-619.

Dryer, Matthew: 1987, 'On Primary Objects, Secondary Objects, and Antidative', *Language* **62**, 808-845.

Everaert, Martin: 1990, 'NP-movement 'Across' Secondary Objects' in *Grammar in Progress*, Foris, Dordrecht, pp. 125-136.

Everett, Daniel: 1987, 'Pirahã clitic doubling', *Natural Language and Linguistic Theory* **5**, 245-276.

Foley, William and Robert Van Valin: 1984, *Functional Syntax and Universal Grammar*, Cambridge University Press, Cambridge.

Grimshaw, Jane: 1990, *Argument Structure*, MIT Press, Cambridge, Massachusetts.

Hale, Kenneth, and S. J. Keyser: 1993, 'On Argument Structure and the Lexical Expression of Syntactic Relations', in K. Hale and S.J. Keyser (eds.): *The View From Building 20*, MIT Press, Cambridge, Massachusetts, pp. 53-110.
Hoji, H.: 1985, *Logical Form Constraints and Configurational Structures in Japanese*, unpublished Ph.D. dissertation, University of Washington.
Jackendoff, Ray: 1972, *Semantic Interpretation in Generative Grammar*, MIT Press, Cambridge, Massachusetts.
Jackendoff, Ray: 1987, 'The Status of Thematic Relations in Linguistic Theory', *Linguistic Inquiry* **18**, 369-412.
Kayne, Richard: 1984, *Connectedness and binary branching*, Foris, Dordrecht.
Kiparsky, Paul: 1987, *Morphology and Grammatical Relations*, unpublished, Stanford University.
Larson, Richard: 1988, 'On the Double Object Construction', *Linguistic Inquiry* **19**, 335-392.
Li, Yafei: 1990, 'On V-V Compounds in Chinese', *Natural Language and Linguistic Theory* **8**, 177-208.
Machobane, 'Malillo: 1989, *Some Restrictions on the Sesotho Transitivizing Morphemes*, unpublished Ph.D. dissertation, McGill University.
Marantz, Alec: 1984, *On the Nature of Grammatical Relations*, MIT Press, Cambridge, Massachusetts.
Pesetsky, David: 1995, *Zero Syntax: Experiencers and Cascades*, MIT Press, Cambridge, Massachusetts.
Rizzi, Luigi: 1990, *Relativized Minimality*, MIT Press, Cambridge, Massachusetts.
Speas, Margaret: 1990, *Phrase Structure in Natural Language*, Kluwer, Dordrecht.
Travis, Lisa: 1991, 'Inner Aspect and the Structure of VP', paper presented at NELS 22, Newark, Delaware,
Trithart, M.: 1977, *Relational Grammar and Chichewa Subjectivization*, unpublished Ph.D. dissertation, UCLA.
Zushi, Mihoko: 1992, 'The Syntax of Dative Constructions in Japanese', unpublished, McGill University.

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* This work is a revised and expanded version of a paper given at NELS 23, Indiana University, and the 6th Conference on Grammatical Relations. The original research it is based on was supported by the Social Sciences and Humanities Research Council of Canada, grant #410-90-0308, and by FCAR of Quebec, grant #91-ER-057. The article was finished while the author was a fellow at the Center for Advanced Study in the Behavioral Sciences, supported by NSF grant SES-9022192. I am thankful for these sources of support. I also wish to thank M. Zushi, L. Travis and D. Pesetsky for their help discussing these issues. Finally, I thank ‘Malillo Machobane for help with the Sesotho data, Masanori Nakamura, and Kikuyo Ohkado for help with the Japanese data, and Carolee Jacobs for help with the Mohawk data. Glosses for the languages discussed follow the glossing conventions of the cited sources.

[1]This is how this statement is phrased in the references cited. However, the reference to the level of D-structure is not crucial. If, following Chomsky (1992), this level is removed from the theory, the same principle can easily be restated as a condition on the operation of the Generalized Transformation that builds phrase structure, or (allowing for chains) as a condition on LF.

[2]Some researchers distinguish goal, benefactive and recipient θ–roles. For purposes of this article, I do not make such a distinction, but rather refer to all of them as goals. This is partly an expository choice and partly a theoretically motivated one, given that I see (46) as a unified principle. Similarly, I will not distinguish patients from themes, or agents from actors or causers.

[3]Of course, no generalization about English goes unchallenged. Pesetsky (personal communication) points out (iii) as a possible counter-example:

(i) I got a book to Mary.

(ii) I got Mary a book.

(iii) Mary got a book.

(iv) *A book was gotten by Mary.

(iii) seems to be of the same type as (8). The ungrammaticality of (iv) apparently confirms this, since unaccusative verbs cannot be passivized (see Baker, Johnson, and Roberts (1989) and references cited there). However, a closer look suggests that more than one sense of the verb *get* is confounded here. Semantic intuitions indicate that (ii) is not the dative-shifted version of (i), but rather of a sentence like “I got a book for Mary”. Indeed, (i) does not seem to undergo dative shift at all. However, (iii) seems to be semantically related to (i) rather than (ii). The fact that (iii) cannot be an unaccusative version of (ii) is explained by the theory I will present. What is not explained on anyone’s account is the grammatical reading of (iii), and its possible relationship to (i). Rather than pursuing this single example, I content myself with pointing out that *get* in English has unique properties and occurs with a variety of other argument structures which may or may not be related to this problem.

Another class of verbs which may provide counterexamples includes *inherit*, and *receive*. If possessors are a subclass of goals in a Gruber/Jackendoff style thematic analysis, then the sentences in (v) have goal subjects and theme objects, and thus are comparable to (8).

(v) a. Mary inherited the ring.
b. Max received a beer.

However, these verbs can be passivized, with the supposed 'goal' realized as the object of a by-phrase:

(vi) a. The ring was inherited by Mary.
b. The first beer was received by Max. (marginal for some speakers)

This shows that the subjects in (v) must be true external arguments of the verbs after all, rather than derived subjects. While they are certainly not canonical agents, they do arguably have more proto-agent properties than anything else in the clause; this would allow them to be treated as agents within a prototype theory of thematic roles like that developed in Dowty (1991). This may also explain why these verbs do not undergo causative/inchoative alternations, as shown in (vii):

(vii) a. *Susan inherited Mary the diamond ring.
b. *John received Max a beer.

Paul Postal (personal communication) points out one further class of verbs that may be relevant. This is exemplified by the verb *reach* in sentences like *The letter reached John on Thursday*. This arguably has a theme subject and a goal object, and hence is thematically similar to the sentences in (7). Baker (in preparation) includes some discussion of these fascinating verbs crosslinguistically; there I argue that such verbs do have a theme subject, but their object is not thematically a goal but rather a 'reference object'--the same theta role borne by the object of a locative preposition. If this is correct, then they are not directly relevant to the issue at hand.

[4]There is considerable idiolectal variation among speakers of English as to which verbs allow dative shift and which verbs allow passive from a dative shift source. For many speakers, examples corresponding to the preposition *for* are more limited than those corresponding to the preposition *to*. Here I assume a fairly liberal dialect (that of the author) to facilitate comparison with other languages. These concerns about productivity do not seem to arise in the other languages considered in this article.

[5]The RG literature does have various observations that 3 can advance to 2 only if the clause is transitive--i.e. if the clause has both a 1 and a 2. However, these are stated as language particular conditions, and must be because 'dative shift' is possible with unergative verbs in some languages, as we shall see.

Similarly, the Lexical Functional Grammar literature touches on a similar paradigm in the context of applicative verbs in Bantu languages. This is discussed in the next section.

[6]The Sesotho data comes from Machobane (1989) and personal communication. The abbreviations used in the Sesotho glosses are: appl, applicative; fv, final vowel (a mood marker); pass, passive; SP, subject prefix

[7]Japanese data comes primarily from Zushi (1992) and personal communication. Abbreviations used in the Japanese glosses include: acc, accusative; cl, classifier; dat, dative; nom, nominative; pst, past.

[8]It is important to point out that (22) captures a slightly wider range of facts

than those reviewed here. For example, Alsina and Mchombo (1988) show that instrumental applicatives cannot be formed on unaccusative verbs, either--a generalization which they also derive from (22). This restriction probably does follow from quasi-semantic theta-theoretic considerations. Observationally, it seems to be true that instruments cannot appear with pure unaccusative verbs across languages, regardless of how that instrument is expressed (cf. ?**The door opened with a key*, where a marginal middle interpretation must be ignored). This makes sense if instruments are analyzed not as a primitive thematic role but as a kind of intermediate agent-patient, along the lines of Jackendoff (1987). Then it is semantically deviant to have a “secondary agent” without (at least an implicit) primary agent.

See fn. 19 for discussion of the third case that Machobane, Alsina, and Mchombo take to be relevant to (22).

[9]Mohawk data comes from the author’s field notes, collected at Kahnawake Quebec between 1989 and 1993. See Baker (in preparation) for discussion. Abbreviations used in the Mohawk examples are: ben, benefactive; fact, factual mood; punc, punctual aspect; refl, reflexive; srfl, semireflexive; 1sS, first singular subject prefix; MsO, masculine singular object prefix; 1sO, first singular object prefix; MsS, masculine singular subject prefix. *Ne* is a very common particle whose exact meaning is unclear.

[10]For example, the verb typically must be a canonical dative-shift verb such as ‘give’ or ‘send’, and the goal must be short--a pronoun or simple proper name. In fact, the specific sentences quoted may not be acceptable for any speaker, given that most British speakers I have asked are conservative dative-shifters who are already rather uncomfortable with the sentences in (4) and (10).

[11]However, some dialects of Chichewa do allow the equivalent of (33), judging by Trithart (1977). There are some strange restrictions on (33) even in Sesotho; for example (33) cannot have an agent in a by-phrase, which is otherwise possible in the language. To complete the picture, sentences like (32/33) are possible in Japanese, but not in Mohawk.

[12]Here I put aside tricky and controversial questions concerning the presence of the preposition *to* in (35) and its absence in (36). For current purposes, we can follow Larson in assuming that *to* is merely a Case marker absorbed in the passive-like process that derives (36). In fact, I believe that *to* is a head involved in θ-marking in these structures, and that part of the difference between (35) and (36) is that the former has an overt P while the latter has a null P (Baker 1992). However, this issue is somewhat orthogonal to the point at hand and reviewing it would take us far afield.

[13]Larson (1988) also makes this assumption for overt anaphors such as *herself* and *each other*.

[14]This property has been documented for passives in languages such as Lithuanian and Turkish. See Baker (1988) for references and a possible analysis.

[15]Importantly, this property can be independently motivated for the Bantu languages in question by other facts about three-argument verbs, as shown in Baker (1988). See also Bresnan and Moshi (1990) for a somewhat different analysis of the contrast between Sesotho-like languages and Chichewa-like languages, as well as a very systematic presentation of the range of evidence relevant to this question.

[16]It should be noted that this analysis uses Burzio’s Generalization as an actual principle of grammar. Crucially, the facts do not follow in any obvious way from more functional/intuitive statements of Burzio’s Generalization, such as “a

construction has only as many structural Cases as it needs to license the arguments of its semantic head". Crucially (097a) has fewer Cases than it needs, due to (45). If correct, this may suggest that Case theory cannot be reduced simply to a theory of argument structure.

[17]In the terminology of Dryer (1987), Mohawk and Sesotho are "primary object" languages.

[18]Certain other thematic roles can be defined in terms of the basic ones. For example instrument can plausibly be analyzed as an intermediate agent/theme, along the lines of Jackendoff (1987); see also fn. 8. From this, its typical position as lower than a pure agent and higher than a pure theme can be derived. Zushi (1992) makes a similar argument for a certain class of source phrases in Japanese.

[19]As far as I can see, the form but not the substance of this proposal is affected by Chomsky's recent (1994) proposal to eliminate stipulated bar-levels in the theory of phrase structure. In particular, his theory still draws a three-way distinction between complements of a head, specifiers of a head, and positions outside the projection of a head--although the first two notions are defined more indirectly, because there is no such a thing as V´. How exactly to integrate the UTAH with Chomsky's most recent proposals merits more careful consideration than I can give here, however.

[20]One specific case in point relevant to the concerns of this paper is the contrast in (i), discussed by both Machobane (1989) and Alsina and Mchombo (1988):

(i) a. *Ngoana o-kul-el-a Lineo. SESOTHO
child SP-be.ill-appl-fv Lineo
'The child is ill on Lineo.' (Lineo is adversely affected)

b. Ntate o-kul-el-a sepetlele.
father SP-be.ill-appl-fv hospital
'My father is ill in the hospital.'

They interpret this contrast in the context of their condition (22) as evidence that goals are higher on the thematic hierarchy than themes, while locations are lower. However, the current theory invites an analysis of this in which the distinction is Case theoretic rather than Theta theoretic in nature. In (ia) the affected object Lineo violates the Case filter as discussed in section 3. In (ib), on the other hand, the location sepetlele does not need to receive Case, because it is morphologically oblique; indeed, such phrases in Sesotho behave like PPs in a variety of ways (see Baker (1992) for discussion). Given this, no distinction in terms of the thematic hierarchy is necessary for these data.